

bifurcation and extending into an ipsilateral vessel and a contralateral vessel, the system comprising:

5 a bifurcated graft formed of a superior member having a graft bifurcation and extending into an ipsilateral member and a contralateral member;

a set of positioning mechanisms capable of intraluminally positioning the bifurcated graft into the corporeal lumen;

B1 Cancel
10 a set of attaching mechanisms capable of attaching the superior member to the superior vessel, the ipsilateral member to the ipsilateral vessel, and the contralateral member to the contralateral vessel, the set of attaching mechanisms being sutured to the bifurcated graft;

B2
a main catheter housing the bifurcated graft, the set of positioning mechanisms, and the set of attaching mechanisms, the main catheter configured as a hollow cylindrical tube having a length along a portion housing the bifurcated graft and defining an inner diameter
15 measuring less than seven millimeters along the length;

whereby the bifurcated graft, the set of positioning mechanisms and the set of attaching mechanisms are housed within the main catheter for intraluminal delivery of the bifurcated graft.

Sub C1
25. (Amended) A system for placing a bifurcated graft in a lumen formed by a wall proximate a vascular bifurcation having an aneurysm, the system comprising:

B2
a bifurcated graft having a superior extremity, an ipsilateral inferior extremity, and a contralateral inferior extremity;

5 a first anchoring mechanism attached to the superior extremity;
a second anchoring mechanism attached to the ipsilateral inferior extremity and
configured to be self-expandable;
a third anchoring mechanism attached to the contralateral inferior extremity and
configured to be self-expandable;
10 a first release wire releasably attached to the ipsilateral inferior extremity such that
the second anchoring mechanism maintains an unexpanded condition;
a second release wire releasably attached to the contralateral inferior extremity
such that the third anchoring mechanism maintains an unexpanded condition;
wherein one or more of the first and second release wires themselves operate to
15 maintain an anchoring mechanism in an unexpanded condition; and
a delivery catheter configured to contain the bifurcated graft, the first anchoring
mechanism, the second anchoring mechanism, the third anchoring mechanism, the first release
wire and the second release wire.

B2
Cont'd

SubC2
B3
37. (Twice Amended) A method of positioning a bifurcated graft across a vascular
bifurcation formed by an upstream vessel a first down stream vessel and a second downstream
vessel using a bifurcated graft delivery system having a first catheter having a hollow cylindrical
tube, a bifurcated graft formed by an upstream duct, a first downstream duct and a second
5 downstream duct, disposed within the first catheter, a second catheter connected to the first
downstream duct and disposed within the first catheter, and a third catheter connected to the

second downstream duct and folded within the first catheter, and a snare guidewire comprising the steps of:

placing the bifurcated graft within the hollow cylindrical tube having an inner
10 diameter less than seven millimeters along its length;

advancing the delivery system through the first downstream vessel and into the
upstream vessel;

withdrawing the first catheter such that the bifurcated graft, the second catheter
and the third catheter are exposed within the upstream vessel;

unfolding the third catheter;

advancing the snare guidewire through the second downstream vessel;

snaring the third catheter with the snare catheter;

pulling the first downstream duct into the first downstream vessel by withdrawing
the second catheter; and

pulling the second downstream duct into the second downstream vessel by
20 withdrawing the third catheter.

38. (Amended) A method for repairing a bifurcated vascular vessel formed by an
upstream vessel a first downstream vessel and a second downstream vessel using a bifurcated
graft delivery system having a delivery catheter, a bifurcated graft formed by an upstream duct, a
first downstream duct and a second downstream duct, disposed within the delivery catheter, a
5 first expandable anchoring mechanism attached to the first downstream duct, said first

expandable anchoring mechanism being self-expanding, a first release wire releasably fastened to the first expandable anchoring mechanism such that the first expandable anchoring mechanism is maintained in an unexpanded state, a second expandable anchoring mechanism attached to the second downstream duct, said second expandable anchoring mechanism being self-expanding, a
10 second release wire releasably fastened to the second expandable anchoring mechanism such that the second expandable anchoring mechanism is maintained in an unexpanded state, and a third expandable anchoring mechanism attached to the upstream duct, comprising the steps of:

configuring one or more of the first and second release wires themselves to maintain an anchoring mechanism in an unexpanded condition;

15 inserting the bifurcated graft delivery system intraluminally into the bifurcated vascular vessel;

withdrawing the delivery catheter such that the bifurcated graft is exposed within the bifurcated vascular vessel;

positioning the bifurcated graft within the bifurcated vascular vessel, such that the
20 upstream duct extends into the upstream vessel, the first downstream duct extends into the first downstream vessel, and the second downstream duct extends into the second downstream vessel;

anchoring the first downstream duct to the first downstream vessel by releasing the first release wire whereby the first expandable downstream mechanism expands into the first downstream vessel;

25 anchoring the second downstream duct to the second downstream vessel by releasing the second release wire whereby the second expandable downstream mechanism expands into the second downstream vessel;